

Transmitted Via Facsimile to (571) 273-8300

PATENT
138543 (553-1077)

Remarks

Claims 6, 7, 9, 26, and 27 are currently pending in this Application. Claims 6, 7, 9, 26, and 27 stand rejected.

Claims 6, 7, 26, and 27 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,619,998 (Abdel-Malek) in view of U.S. Pat. No. 6,879,729 (Kamath), and further in view of U.S. Pat. No. 6,674,879 (Weisman). Claim 9 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Abdel-Malek in view of Kamath, and further in view of U.S. Patent No. 4,887,306 (Hwang). Applicant traverses these rejections for at least the reasons set forth hereafter.

Claim 6, as amended, recites a method for implementing a speckle reduction filter comprising "receiving a processed data stream from a processor...dividing the processed data stream into data subsets...simultaneously filtering the data subsets by using a speckle reduction filter to produce filtered data subsets...and producing an image data stream based on the filtered data subsets, wherein the filtering step is based on adjustable speckle reduction parameters, the method further comprising...changing values of the speckle reduction parameters between different first and second value sets to form a first and second image data streams...and simultaneously co-displaying a first image and a second image on a common screen, wherein the first image is generated from the first image data stream, and wherein the second image is generated from the second image data stream, and further wherein the first image and the second image are speckle-reduced images using the speckle reduction parameters of the first value set and the speckle reduction parameters of the second value set, respectively."

None of Abdel-Malek, Kamath, and Weisman, considered alone or in combination, describe a method as recited in claim 6. For example, none of Abdel-Malek, Kamath, and Weisman, considered alone or in combination, describes co-displaying first and second images that are speckle-reduced using the speckle reduction parameters of different first and second value sets, as recited in claim 6.

The Office has admitted that Abdel-Malek and Kamath do not disclose simultaneously co-displaying filtered images on a common screen. Instead, the Office has relied on Weisman to

Transmitted Via Facsimile to (571) 273-8300

PATENT
138543 (553-1077)

provide the simultaneous co-display of filtered images. However, Weisman does not describe co-displaying first and second images that are speckle-reduced using the speckle reduction parameters of different first and second value sets, respectively. Rather, Weisman describes co-displaying a speckle reduced image with edge detected and color quantization images that are generated from the same speckle-reduction parameters as the speckle-reduced image.

Weisman illustrates a quad display of a captured echocardiogram raw data image, a speckle reduced image, an edge detected image, and a color quantization of the movement of the image during the heart cycle along with a patient information screen. However, the edge detected image and the color quantization image are generated from edge detection parameters and color quantization parameters, respectively, that are applied to the same speckle reduced image. Accordingly, the edge detected and color quantization images are not images that are generated from different speckle-reduction parameters from each other and/or the speckle reduced image. Rather, both the edge detected and color quantization images are generated from the same speckle reduction parameters as the speckle reduced image. In contrast, claim 6 recites changing the values of the speckle reduction parameters of the speckle reduction filter between different first and second value sets, and co-displaying first and second images that are speckle-reduced using the speckle reduction parameters of the first and second value sets, respectively. In view of the above, Weisman does not describe co-displaying first and second images that are speckle-reduced using the speckle reduction parameters of different first and second value sets, respectively.

On pages 4 and 5 of the outstanding Office Action, the Examiner further argues that it would be obvious in view of column 13, lines 1-6 of Weisman to co-display lightly filtered, moderately filtered, and heavily filtered speckle reduced images because Weisman describes options for light, moderate, or heavy speckle in the speckle reduced image. However, Weisman does not describe that the co-displayed speckle reduced image, edge detected, and color quantization images may be provided with different levels speckle reduction than each other. Rather, column 13, lines 1-6 of Weisman describes options for providing the speckle reduced image with different levels of speckle reduction. As discussed above, the edge detected and color quantization images are generated from edge detection parameters and color quantization parameters, respectively, that are applied to the same speckle reduced image. Accordingly, the

Transmitted Via Facsimile to (571) 273-8300

PATENT
138543 (553-1077)

edge detected and color quantization images are generated from the same speckle reduction parameters as the speckle reduced image and therefore have the same level of speckle reduction. When a light or heavy speckle is selected instead of the default moderate speckle, the method described by Weisman would co-display edge detected and color quantization images that have the same light or heavy speckle as the speckle reduced image. At no point does Weisman describe that the co-displayed speckle reduced image, edge detected, and color quantization images may have different levels of speckle reduction than each other. For at least the reasons set forth above, it would not be obvious in view of Weisman to co-display first and second images that are speckle-reduced using the speckle reduction parameters of different first and second value sets, respectively.

Because Abdel-Malek, Kamath, and Weisman individually fail to describe or suggest one or more elements of claim 6, it follows that a combination of Abdel-Malek, Kamath, and Weisman cannot describe or suggest such element(s). For at least the reasons set forth above, claim 6 is submitted to be patentable over Abdel-Malek in view of Kamath, and further in view of Weisman.

Hwang does not make up for the deficiencies of Abdel-Malek, Kamath, and Weisman at least with respect to independent claim 6. Claim 9, as amended, depends from independent claim 6. Applicant submits that the cited references fail to describe each of the limitations of dependent claim 9. Additionally, claim 9 depends from claim 6. Consequently, since claim 6 defines allowable subject matter, claim 9 also defines allowable subject matter.

Independent claims 26 and 27 are submitted to be patentable over Abdel-Malek in view of Kamath, and further in view of Weisman for at least the reasons set forth herein with respect to independent claim 6.

Claim 7 recites a method for implementing a speckle reduction filter comprising, among other things, "simultaneously co-displaying, in a dual display mode, a filtered image and an original unfiltered image on a common screen...and enabling a user to enter the dual display mode at least one of during a scan and while a replay of pre-recorded cine loops is displayed on a screen."

Transmitted Via Facsimile to (571) 273-8300

PATENT
138543 (553-1077)

None of Abdel-Malek, Kamath, and Weisman, considered alone or in combination, describe a method as recited in claim 7. The Examiner relies on column 12, line 54 through column 13, line 17 of Weisman to describe the step of "enabling a user to enter the dual display mode at least one of during a scan and while a replay of pre-recorded cine loops is displayed on a screen." However, Weisman does not describe enabling a user to enter a dual display mode of a filtered image and an original unfiltered image at least one of during a scan and while a replay of pre-recorded cine loops is displayed on a screen. Column 12 of Weisman describes that, using a workstation, a user can view an echo directly from the echo machine, from digitized image sequences, or from videotape. Columns 12 and 13 also describe processing digitized image sequences and simultaneously displaying the processed images and a raw image on a quad display, using the workstation. However, Weisman does not describe that the quad display is entered into during the echo scan or while the echo is being viewed from digitized image sequences or on a videotape. Rather, it is only evident from Weisman that the quad display is entered into after processing of the digitized image sequences. Nowhere does Weisman describe that the user can enter the quad display mode during the echo scan or while the echo is being viewed from digitized image sequences or on a videotape.

Moreover, Weisman appears to teach away from enabling a user to enter the quad display during the echo scan because the scan is still being performed and therefore only some of the digitized images would have been completed and therefore ready for processing. Notably, Weisman does not describe processing only some of the digitized images while others are being obtained. Moreover, Weisman appears to teach away from enabling a user to enter the quad display while the user is viewing the echo from digitized image sequences or on a videotape because the user performs the image processing by choosing several processing combinations from menus of the workstation. Accordingly, the digitized image sequences and the videotape may not be viewable by the user while the menus are being viewed. Regardless, nowhere does Weisman describe that the user can enter the quad display mode during the echo scan or while the echo is being viewed from digitized image sequences or on a videotape.

Because Abdel-Malek, Kamath, and Weisman individually fail to describe or suggest one or more elements of claim 7, it follows that a combination of Abdel-Malek, Kamath, and Weisman cannot describe or suggest such element(s). For at least the reasons set forth above,

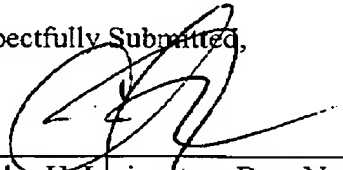
Transmitted Via Facsimile to (571) 273-8300

PATENT
138543 (553-1077)

claim 7 is submitted to be patentable over Abdel-Malek in view of Kamath, and further in view of Weisman.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



Charles H. Livingston, Reg. No. 53,933
THE SMALL PATENT LAW GROUP LLP
611 Olive, Suite 1611
St. Louis, MO 63101
(314) 584-4089
(314) 584-4061 (Fax)